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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,728	09/09/2003	Toshihisa Macda	15162/06160	2797
24367	7590	07/20/2007		
SIDLEY AUSTIN LLP 717 NORTH HARWOOD SUITE 3400 DALLAS, TX 75201			EXAMINER LAM, HUNG H	
			ART UNIT 2622	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/658,728

Applicant(s)

MAEDA ET AL.

Examiner

Hung H. Lam

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09/09/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 09/09/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 and 5-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Oda (US-5,528,291).

With regarding **claim 1**, Oda discloses an image capturing apparatus comprising:  
an image sensor in which a charge accumulating device is electrically interposed between a substrate and a charge transfer path (see Fig. 6B);

a switching element (Fig. 6B; Vsub 50) for switching a substrate voltage in order to control a barrier voltage which is generated between said substrate and said charge accumulating device (Col. 11, Ln. 17-28); and

a controller (19) for controlling said switching element so as to selectively inhibit the switching of said substrate voltage at the time of image capturing in accordance with an image capturing condition (Col. 11, Ln. 17-28; Col. 12, Ln. 33-51).

With regarding **claim 2**, Oda discloses the image capturing apparatus wherein said image capturing condition includes a present status of an image capturing mode of said image capturing apparatus (Col. 11, Ln. 38-54).

With regarding **claim 5**, Oda discloses the image capturing apparatus further comprising: a discriminator for discriminating whether the subject is a moving subject or not (Col. 11, Ln. 38-58), wherein when the subject is a moving subject, said controller inhibits switching of said substrate voltage (Col. 11, Ln. 38-Col. 12, Ln. 60).

With regarding **claim 6**, Oda discloses the image capturing apparatus wherein when the subject is not a moving subject, said controller permits switching of said substrate voltage (Col. 11, Ln. 38-Col. 12, Ln. 60).

With regarding **claim 7**, Oda discloses the image capturing apparatus further comprising: an image processor (Fig. 4; controller 16 and substrate voltage control 19)

for processing image data generated by said image sensor (Col. 9, Ln. 25-55), wherein said image processor changes a process in accordance with a present status of said substrate voltage (Col. 11, Ln. 25-Col. 12, Ln. 60).

With regarding **claim 8**, Oda discloses the image capturing apparatus wherein said image processor changes a tone conversion characteristic for said image data in accordance with the present status of said substrate voltage (Col. 8, Ln. 60 – Col. 9, Ln. 17).

With regarding **claim 9**, Oda discloses a method of switching a substrate voltage in an image capturing apparatus including an image sensor in which a charge accumulating device is electrically interposed between a substrate (see Fig. 6B) and a charge transfer path and which can control a barrier voltage which is generated between said substrate and said charge accumulating device by switching said substrate voltage (Col. 11, Ln. 17-28; Col. 12, Ln. 33-51), the method comprising the following steps of:

detecting an image capturing condition (Col. 12, Ln. 33-51);

switching said substrate voltage at the time of image capturing when a first image capturing condition is detected (Col. 12, Ln. 33-51); and

maintaining said substrate voltage at the time of image capturing when a second image capturing condition is detected (Col. 11, Ln. 29-32; Col. 12, Ln. 33-51).

With regarding **claim 10**, Oda discloses an image capturing apparatus comprising:

an image sensor in which a charge accumulating device is electrically interposed between a substrate and a charge transfer path (see Fig. 6B);

a switching element capable of switching a substrate voltage to control a barrier voltage which is generated between said substrate and said charge accumulating device (Col. 11, Ln. 17-28), wherein switching time required for an operation of switching said substrate voltage is variable (see different timing diagrams of the Sub switch in monitor mode Fig. 7 and still mode Fig. 12); and

a controller for changing said switching time for image capturing in accordance with an image capturing condition (Col. 11, Ln. 29-32; Col. 12, Ln. 33-51).

With regarding **claim 11**, Oda discloses the image capturing apparatus wherein said image capturing condition includes exposure time of said image sensor (Col. 8, Ln. 60 – Col. 9, Ln. 17).

With regarding **claim 12**, Oda discloses the image capturing apparatus wherein said controller shortens said switching time as the exposure time of said image sensor is shortened (Col. 8, Ln. 60 – Col. 9, Ln. 17; Col. 11, Ln. 25-Col. 12, Ln.64).

With regarding **claim 13**, Oda discloses a method of switching a substrate voltage in an image capturing apparatus including an image sensor in which a charge

accumulating device is electrically interposed between a substrate and a charge transfer path (see Fig. 6B) and of which barrier voltage which is generated between said substrate and said charge accumulating device is controllable by switching said substrate voltage (Col. 11, Ln. 17-28; Col. 12, Ln. 33-51), the method comprising the steps of:

detecting an image capturing condition (Col. 12, Ln. 33-51);

switching said substrate voltage in first response time for image capturing when a first image capturing condition is detected (Col. 12, Ln. 33-51); and

switching said substrate voltage in second response time for image capturing when a second image capturing condition is detected (Col. 11, Ln. 29-32; Col. 12, Ln. 33-51).

With regarding **claim 14**, Oda discloses the method wherein said image capturing condition includes exposure time of said image sensor (Col. 8, Ln. 60 – Col. 9, Ln. 17).

With regarding **claim 15**, Oda discloses the method wherein exposure time in said first image capturing condition is shorter than exposure time in said second image capturing condition, and said first response time is shorter than said second response time (Col. 8, Ln. 60 – Col. 9, Ln. 17; Col. 11, Ln. 25-Col. 12, Ln.64).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda in view of Saruwatari (US-6,727,949).

With regarding **claim 3**, Oda discloses the image capturing apparatus further comprising:

a first mode is set (monitor mode), said controller (16 and 19) inhibits switching of said substrate voltage a taking lens (Fig. 7; sub switching clock is set to zero; Col. 11, Ln. 38-58);

However, Oda fails to explicitly disclose a driver for driving said taking lens to a focus position of a subject, wherein said image capturing mode includes a first mode of continuing driving of said taking lens by said driver also after a focus state is achieved on the subject.

In the same field of endeavor, Saruwatari teaches an auto focusing system of a conventional camera for operating in a moving-image shooting mode and still image shooting mode (Col. 3, Ln. 3-9). Saruwatari further teaches that the stopped position of the focusing lens in shooting moving images is not always a position at which the



peak value of the focus evaluating signal is obtained and that the focusing action is not restarted if the amount of blur of the images is about the same as a diameter of an allowable circle of confusion (Col. 3, Ln. 25-33). Saruwatari teaches that it is preferable to make the focusing lens in a position corresponding to the peak value of the focus evaluating signal in still image shooting mode in order to obtain high quality image (Col. 3, Ln. 34-44). In light of the teaching from Saruwatari, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oda by having the stopped position of the focusing lens in shooting moving images not always be stopped at a position of the peak value of the focus evaluating signal and focusing action is not restarted if the amount of blur of the images is about the same as a diameter of an allowable circle of confusion. The modifications thus permit the camera to continue a moving-image shooting operation and keep the focusing lens stopped even in an out-of-focus state as long as the focus evaluating signal is not found to be smaller than the restart threshold value  $V_{th}$  (Saruwatari: Col. 3, Ln. 10-25).

With regarding **claim 4**, Oda discloses the image capturing apparatus further comprising:

when a second mode is set (still mode), said controller permits switching of said substrate voltage (Fig. 12; sub switching clock 1; Col. 11, Ln. 38-Col. 12, Ln.68).

However, Oda fails to explicitly disclose wherein said image capturing mode further includes a second mode of stopping the driving of said taking lens by said driver when the focus state is achieved on the subject.

In the same field of endeavor, Saruwatari teaches an auto focusing system of a conventional camera for operating in a moving-image shooting mode and still image shooting mode (Col. 3, Ln. 3-9). Saruwatari further teaches that the stopped position of the focusing lens in shooting moving images is not always a position at which the peak value of the focus evaluating signal is obtained and that the focusing action is not restarted if the amount of blur of the images is about the same as a diameter of an allowable circle of confusion (Col. 3, Ln. 25-33). Saruwatari teaches that it is preferable to make the focusing lens in a position corresponding to the peak value of the focus evaluating signal in still image shooting mode in order to obtain high quality image (Col. 3, Ln. 34-44). In light of the teaching from Saruwatari, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Oda by having the stopped position of the focusing lens in shooting still images to be stopped at the peak value of the focus evaluating signal. The modifications thus permit the camera to capture high quality image (Saruwatari: Col. 3, Ln. 34-44).

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Kohno (US-4,963,983) discloses a CCD image sensor having biasing voltage level at the semiconductor substrate.

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b) Hori (US-2005/0,179,144) discloses an image pickup apparatus having Vsub control circuit.

c) Tanaka (US-6,982,751) discloses an imaging apparatus comprising a substrate bias generator.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LIN YE can be reached on 571-272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HL  
07/10/07

JAMES M. HANNETT  
ART UNIT 2622  
